

Notes for Operating Reserves Work Group Jan-28-2003

Dave Gilman (BPA) & Andy Law (AVST) agreed to co-chair the group.

Discussion was based on the page distributed by BPA titled, *TRANSMISSION BUSINESS LINE BUSINESS PRACTICES TECHNICAL FORUM, OPERATING RESERVES ISSUES - Description*. Notes will be organized around this paper.

1. *150 MW floor on self-supply*

In order to self-supply Operating Reserves (OR) the Transmission customer must have deliveries from resources in the BPAT control area that equal or exceed 150 aMW. This results in an average operating reserve requirement of at least 8 aMW. BPAT is convinced that the average requirement must not be less than 8 MW to be assured that the self-provider's resources properly responds to a dispatch order.

In response to the questions, BPA had the following responses:

- The method was used to determine the 150 aMW, is that 150 MW corresponds to an 8 MW reserve requirement. BPA's actual experience indicates that 8 MW is the smallest response that BPA can observe and verify as being responded to by a customer providing OR. (Note that 115 MW of thermal resource corresponds to an 8 MW reserve requirement & 8 MW corresponds roughly to 5.2% (BPA weighted average) of 150 MW).
- Currently, there are 3 self-providers.
- BPA allows annual election for self-supply selections. BPAT was concerned that if self-providers drop in and drop out it can destabilize the system. Also, annual elections parallel other selections.
- Grand Coulee has a dead-band of 12 MW while other federal plants have a dead-band of 5 MW.
- Telemetry dead-bands and noise prevent observation of small responses.
- The NWPP does not verify that participants respond to OR commands unless pool-wide response fails to meet response criteria.
- The NERC control standard requires 100% recovery within 15 minutes of a disturbance.
- ICCP is used to communicate with self-providers and monitor self-provider performance.
- Previously, BPA incurred a \$1M cost to carry an extra 1% reserves for 3 months following a disturbance where NERC criteria wasn't met. To acquire excess reserves to cover small reserve requirements will cost extra dollars. BPA noted that the average is 2-3 disturbances per week.
- BPA does not impose financial penalties on customers – but uses a “6 strikes you are out” policy of terminating self-provider status after 6 failures.
- A 500 MW resource running 25% of the time does not qualify for self providing because the average generation of 125 aMW is below 150 MW.
- Entities may band together to get an average above the 150 MW minimum, except Slice customers are prohibited from banding together.

- Slice participants with average deliveries less than 150 MW do not qualify for self-provision because BPA wants to treat them as no different than an independent resource.
- BPA's average OR requirement is about 550 MW. If a contingency occurs on BPA's system that is less than BPA's reserve obligation, then BPA cannot call upon others to recover from the contingency. If the contingency is greater than BPA's reserve obligation, then BPA may call upon others in the pool to help recover from the contingency.
- Customers expressed a concern that this policy will discourage the construction of new small peaking units.
- Andy Law - Customers asked if an IPP forms its own Control Area will it be allowed to provide its own reserves (from another supplier)?

A sub-group will get together to comment on this issue and to provide an ~~suggest~~ alternative policy. This sub-group consisted of:

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|----------------------|------------------|
| • Andy Law | Avista Energy |
| • Jim Scheel?? | Pend Oreille PUD |
| • Ed Groce | Avista Energy |
| • Steve Kern | PNGC |
| • Gordon Dobson-Mack | PowerEx |
| • Denise Hill | Transalta |
| • Anne Marie Claire | Transalta |
| • Lynn Aspaas | BPAP |
| • Anne Miles | Puget Merchant |
| • Larry Felton | Okanogan PUD |
| • Sharon Liebert | Douglas PUD |

2. One supplier per transmission customer

BPAT requires that a Transmission customer supply its total OR requirement from one supplier. As an automated signal is sent to the supplier's control center, it is not practical to change the communications and software needed to implement regular changes in suppliers. It is also more difficult to observe the response of multiple suppliers.

PWX has opportunities to provide low priced reserves. PWX believes that the market would be more efficient if it was allowed to provide reserves during these periods.

BPAT stated that there is not a real market now since BPA and PWX control most of the region's hydro that is used for reserves. BPAT resists the idea of facilitating a reserve market because BPAT believes that the RTO will bring an OR market and it would be very difficult to provide a temporary market. Customers countered that we could help structure the market by working towards an OR market now and that a market will develop if BPA rules allowed more choice of suppliers.

Customers stated that we need to look at ways everyone can reduce the cost of providing reserves. Ancillary Services are a step toward "unbundling", however, reduced costs

remain an issue since BPA's rates are no longer significantly below market cost. BPA's rates are based on annual costs, not market costs that vary seasonally.

Customers suggested that during low-hydro periods of the year, that BPA might be able to use other suppliers for OR to decrease costs or to avoid spill conditions.

BPA noted that changes in this business practice may lead to Rate changes.

BPAP stated that there was very little value to others providing reserves to BPAT because they are almost always within 1% of most efficient in loading their generating units. This normally provides adequate unused generation capacity for OR.

BPA stated that the hurdles to cross are not just AGC and communication issues, but also billing issues.

The customers contend that there already is a market, but stated that they believe that one supplier for periods of at least one year is one extreme in providing the market. They stated that the other extreme would be multiple OR suppliers per customer that could change every hour for every schedule. Isn't there a middle ground we could work towards now?

This led to a discussion of (1) how often should a change be allowed and (2) how much notice would a customer have to give BPA to change suppliers. Ideas ranged from existing practices of "six to 18 months to set up a self-supplier" to a proposed one-month notice for "seasonal opportunities". Customers such as Avista, PowerEx, and TransAlta would be interested in "seasonal opportunities". BPA noted that WECC has certain reserve standards that need to be maintained and that a 3-month notification for "seasonal" would be better than a one-month notice.

Gordon Dobson-Mack agreed to head up a small sub-group to investigate the obstacles to do this. The subgroup consists of:

- Gordon Dobson-Mack PowerEx
- Denise Hill Transalta
- Anne Marie Claire Transalta
- Lynn Aspaas BPAP
- Anna Miles Puget Merchant

A first draft of the issues to be addressed was worked out on Jan 27 in the afternoon and is shown at the end of the minutes.

3. Allowing generators to self-supply

BPAT interprets this to mean that a generator operator can arrange for the OR Requirement for all the schedules from its generation in the control area, even when it is not the Transmission Contract Holder (TCH). The present BPAT Rate Schedule requires the TCH to arrange for its OR Requirement.

Two possible issues here: The first is that a generator provides spinning reserves, and the second is that a generator contracts to have reserves provided for so that the TCH's do not need to carry reserves. This may be a BPA Tariff issue as the Tariff says the TCH must arrange for reserves. BPA will review this on a case-by-case basis. Provided tracking and billing issues are resolved, BPA will consider such changes subject to concerns raised in #1 and #2.

BPAP suggests that customers may enter into bilateral agreements concerning providing reserves to the BPAP. Such agreements would avoid AGC, scheduling, and billing hurdles required when working with BPAT.

BPAT buys reserves from PBL and adds a small charge to cover BPAT costs and energy is a pass-through cost. PBL rates are estimated costs for generation capacity required to provide operating reserves.

In 2006, BPAT may purchase some or all of its OR from the market (unlike the present exclusive arrangement with BPAP). It may be prudent to start working towards structuring such agreements well ahead of time.

Customers had concerns about whether generation that is part of a Reserve Sharing Program could sell reserves, or whether one generator could provide reserves to another generator.

Additional discussion at 2/6 meeting.

4. Rules for arranging for interruptible exports

Some customers are interested in transferring the OR Requirement for generation in the BPA control area to their control area to avoid the charge. An interruptible schedule (when the resource has a contingency the schedule is interrupted) would do this. BPAT would have to develop rules for implementation and a system for an automated approach.

BPA believes this can be worked towards; however, the accounting issues can be complex. The most complicated case would be a partial unit failure with some schedules from the unit carrying reserves and the rest interruptible.

5. Ability to choose split between spinning and supplemental reserve

Some customers would like the option to supply only supplemental reserves. Supplemental reserves are non-spinning but can be loaded in 10 minutes. Normally BPAT calls on spinning reserves first to meet contingencies. This would require additional automation and tracking.

BPA believes this can be worked towards; however, BPA may double the self-supply floor (e.g. from 150 aMW to 300 aMW) if reserves move from 7.0% to 3.5 % (supply only supplemental reserves instead of total). Normally excess spinning is to be used prior to using supplemental reserves. Because of this, BPA rarely calls on its own

supplemental reserves. Thus, BPA would need to change its system to call on supplemental reserves being supplied by customers. BPA recommended that customers review a white paper on reserves posted on the WECC web site.

BPA noted that changes will need to be made in AGC, backup, and billing systems.

Additional discussion on 2/6.

6. *In hour schedule changes for those that self-supply*

This appears to be a Scheduling issue.

Discussion, if any, delayed to 2/6.

7. *Selling firm power over NF transmission requires OR*

This is a seams issue on the treatment of non-firm transmission. It is being debated in WECC committees and other forums. We [BPA] propose not to discuss it in this forum.

Discussion, if any, delayed to 2/6.

8. *For L-shaped schedules/charges capture rules in Business Practices*

The customer are concerned about being double charged for OR when power is scheduled to a sink which has schedules out, as a hub. The customers would like to have the rules for determining which schedules are charged for reserves in the Business Practice.

The generic business practice rules were made available.

Will be discussed on 2/6

Issues Related to Item 2

From 13:15 – 14:00 a White Board Discussion was held to work through a hypothetical example of a TBL customer arranging for a 3rd party to supply their Operating Reserve Obligation. The purpose of the discussion was to collectively identify issues with the Scheduling, AGC and Billing systems that would need to be addressed in order for the example to be reliably implemented in an efficient manner.

Hypothetical Example: Powerex and Avista Energy agree in Jan '04 that Powerex will provide the Operating Reserve Obligation in Q2 (Apr – Jun '04) for Avista Energy's 350 MW peak/150 aMW of transmission schedules originating in the BPA TBL Control Area.

TBL Scheduling Details:

- Accounts would need to be built in the TBL scheduling systems.
 - Pointers would need to be set (manually) on these accounts identifying BC Hydro as the Operating Reserve supplier and the type of resources (thermal, hydro) that BC Hydro would use to supply the Operating Reserve;

- Firm transmission demand account would need to be set up in RSPP to ensure that a firm path exists between BC and the BPA Network to deliver the Operating Reserves when called upon;
- After XX:40 the schedules would be locked down and transferred to the AGC system, including the amount of ORO that is being carried by BC Hydro;
- E-Tag Product Code: E-Tag would need to show reserves – currently schedules do not show reserves.
- Electronic verification (autocheck #)

TBL AGC System & System Operations Details:

- BPA would send the ORO for Avista Energy's schedules to BC Hydro via the ICCP datalink;
- BC Hydro would echo back the amount of Operating Reserve it was carrying for Avista Energy's Schedules;
- BPA and BC Hydro would set up data checks to alarm whenever there was a discrepancy between the amount of ORO sent by BPA and the amount that BC Hydro was carrying;
- When a generator is forced out of service in the BPA control area then TBL's AGC would calculate the pro-rata share of the disturbance that would be supplied by the Operating Reserve carried by BC Hydro;
- BC Hydro's AGC would automatically respond(real time dispatch; dynamic scheduling) to a reserve dispatch signal from BPA via the ICCP;
- If the contingency in the BPA control area exceeded BPA's total Operating Reserve Obligation, then BC Hydro would receive a dispatch instruction for the full amount of the reserves held for Avista Energy's schedules, and possibly a second request for reserve sharing under the NWPP Pro-rata Reserve Sharing Program;
- If one of Avista Energy's resources was forced out of service then TBL would need to be informed. The best method would be a direct feed of generator data followed up by a phone call within 4 minutes of the disturbance.
- The BPA AGC system would calculate and send (via the ICCP datalink to BC hydro) the integrated MW of Operating Reserve Energy that was dispatched at the end of each hour;

Billing System Details:

- Pointers in the accounts would be preset so that the billing system would know to not bill Avista Energy for the Operating Reserve Capacity charges;
- Any Operating Reserve Energy that is delivered to the BPA control area would be credited to the Avista Energy accounts, conversely any Operating Reserve Energy that was received from the BPA control area to backstop Avista Energy schedules from resources that were forced out of service;
- It would be up to Avista Energy and Powerex to settle the actual cost of Operating Reserves between themselves.
- Energy bill goes to ?
- Reserve capacity bill goes to ?
- How to handle splits from units like Centralia ?

Issues & Questions that need to be addressed:

- How to ensure that BPA is able to calculate the incremental ORO supplied by a 3rd party for both real time and prescheduled schedules?
 - *Apparently TBL scheduling system can handle this complexity already if the pointers in the accounts are set up correctly;*
- Nomination Period: What is the shortest nomination period that would be practical given that the suitable accounts with correct pointers would need to be set up?
- Must a TCH have all of its resources within the TBL control area supplied by a 3rd party, or would it be possible to have more than one 3rd party supplier provided that the proper accounts were set up?
- How to ensure a firm transmission path exists between the Operating Reserve Source and the TBL control area?
- Would an E-tag need to be issued before or after operating reserve is dispatched from an adjacent control area?
- Why does TBL have to be the clearinghouse for all operating reserve energy transactions?
- How to handle false dispatch requests for Operating Reserve?
- How to handle non-response to an Operating Reserve dispatch?
- How to handle a forced outage of a unit like Centralia that would have multiple TCHs' picking up energy? Reserve capacity vs. energy payments?
- How could this scenario be applied to Slice customers?